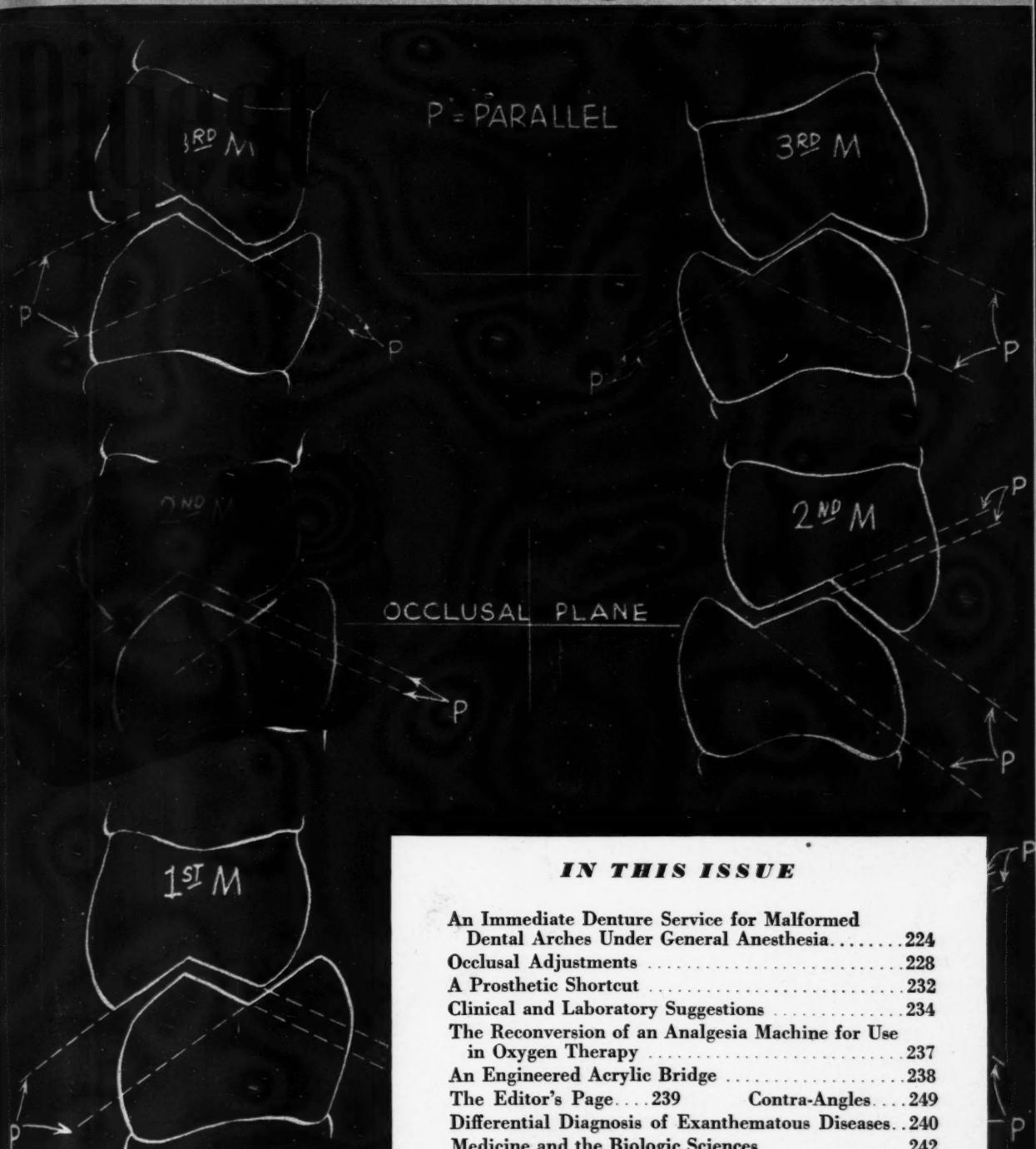


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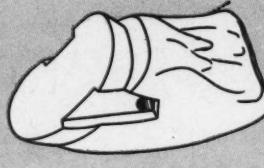
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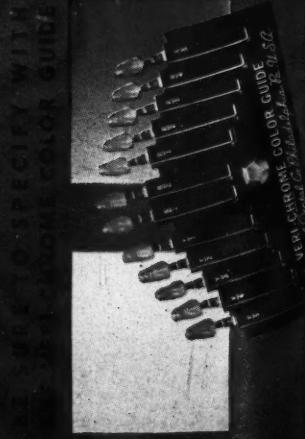
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# Dental Digest

MAY 1947

## About Our

## CONTRIBUTORS

WILLIAM J. SONE, D.D.S. (Loyola University, New Orleans, School of Dentistry, 1926) specializes in oral surgery and prosthodontia. For ten years he has been an instructor in oral hygiene and oral surgery at the South Chicago Community Hospital School of Nursing. The surgical procedure involved in the immediate denture service reported by Doctor Sone this month has been filmed in Kodachrome. The 1200 foot production shows the step-by-step technique of alveolectomy and is self-explanatory.

JOHN C. HEISLER, D.D.S. (Northwestern University, Dental School, 1918) is a general practitioner. He has contributed an analysis of the masticatory process to this issue which provides a basis for correcting the occlusal relationship of the teeth. Carefully planned diagrams illustrate the technique of OCCLUSAL ADJUSTMENTS.

CHARLES L. MEISTROFF, D.D.S. (Medical College of Virginia, School of Dentistry, 1931) last appeared in these pages on October 1945 when he was a Captain in the Army Dental Corps. He has contributed numerous articles to the dental literature on roentgenology and dental pathology and surgery, phases of dentistry in which he is particularly interested. In this month's DIGEST he describes A PROSTHETIC SHORTCUT in denture replacement. Mr. Harvey Dreyer assisted with the photography.

The idea of converting an analgesia machine into an apparatus for administering oxygen in periodontal conditions is demonstrated by HENRY FISCHER, D.D.S. (New York University College of Dentistry, 1933). Doctor Fischer, a general practitioner, has been a DIGEST contributor several times in the past decade.

PAUL F. GRIMM, D.D.S. (Chicago College of Dental Surgery, 1918), a general practitioner, cites the advantages of AN ENGINEERED ACRYLIC BRIDGE over the conventional type of bridge.

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The magazine is mailed on the fifteenth of the month of issue.

## An IMMEDIATE DENTURE SERVICE for *Malformed Dental Arches under General Anesthesia*

WILLIAM J. SONE, D.D.S., Chicago

### DIGEST

*Alveolectomy under general anesthesia preceded the placement of immediate dentures in the forty-five minute surgical procedure described. Completely reconstructing a malformed dental arch with malposed teeth improved the health, appearance, and outlook of the patient.*

*The intravenous administration of pentothal sodium by the drop method avoided obstruction of the operative field; induced relaxation so that the mandible could be moved freely; and obviated the need to inhale an unpleasant anesthetic which might have caused nausea.*

IMMEDIATE DENTURE service for the average person does not involve unusual procedures. For that unfortunate person who has reached adult life with malposed teeth and malformed dental arches, however, immediate denture service involves a problem of complete mouth reconstruction. More than the usual dental office procedures are required; in addition to the preliminary work at the dental chair and in the prosthetic laboratory, hospitali-

zation, general anesthesia, and surgery are necessary. In carefully selected cases this reconstruction can be accomplished with satisfaction to the operator and benefit to the patient.

The case presented here might have been corrected by orthodontics during childhood but due to neglect or perhaps finances, this was not done. During maturity the patient became much concerned about her appearance (a protrusion and pronounced overbite). She shied away from her friends and associates, almost feeling herself an outcast. When appearing in public,

she was so conscious of her oral condition that she covered her deformity with her hands whenever it was necessary to speak. We are happy to state that we were able to change her whole appearance and her outlook on life through a forty-five-minute surgical procedure which restored normal occlusion and a natural profile, a correction which would have taken two or three years of orthodontic treatment in her childhood.

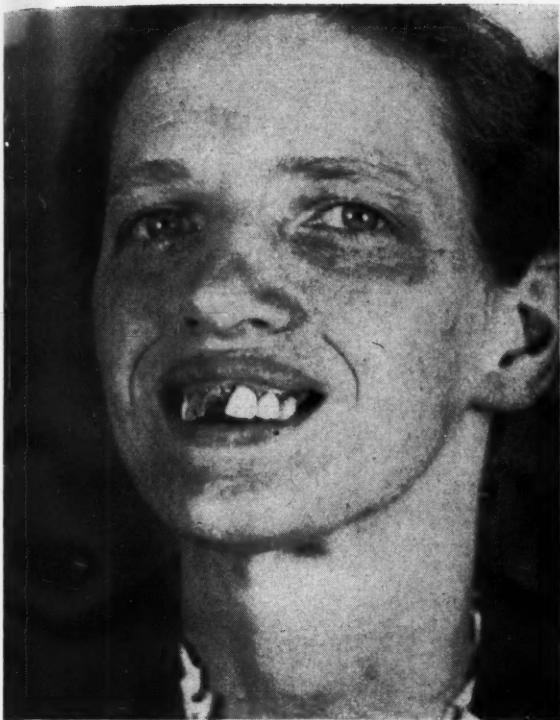
Prior to the introduction of the immediate denture procedure, the patient would have had to have an oral surgeon remove the protrusion; wait a period of three or four weeks for healing, and then visit her dentist re-



1A View of patient before operation.



1B Model of patient's mouth before alveolectomy and placement of immediate denture. Deep overbite and excessive protrusion.



**2A and 2B** Smiling view of patient before and after immediate denture service.

**3A and 3B** Previous to correction of her dental conditions, the patient was painfully self-conscious; afterward, her changed appearance induced a new attitude in her social relationships.





peatedly while corrective dentures were being made. In the procedure described here, the patient was hospitalized and a type of general anesthetic given intravenously which entailed no obstruction or interference in the operative field—pentothal sodium. (Other decided advantages of this type of anesthetic are that (1) the patient does not have to inhale an unpleasant anesthetic that might cause gastric irritation and nausea, and (2) the patient is relaxed so that the mandible can be manipulated to any suitable position.)

The successful management of unusual immediate denture cases includes:

1. Hospitalization.
2. Examination by a physician.
3. Suitable general anesthetic, administered by a skilled anesthetist.
4. A good chain of asepsis.
5. Capable assistants.

The importance of a radical alveolectomy should be stressed. An incomplete alveolectomy merely inconveniences the patient and does not accomplish the desired results.

**4A and 4B** *Restoration of normal occlusion brought about a pleasing natural profile free of protrusion.*  
Left: Before. Right: After.

#### **Preoperative Steps**

1. The denture should be completed prior to surgery.

a) Modeling compound with Adaptol was used for the impression in the case reported here and the bite was established.

b) A stone model was made and the extent of the alveolectomy determined and completed on the model.

2. The patient was examined by a physician to determine whether pentothal sodium could be administered safely to her.

3. Morphine sulfate  $\frac{1}{6}$  grain combined with atropine sulfate  $\frac{1}{150}$  grain was given hypodermically thirty or forty-five minutes before surgery.

4. The patient's face was scrubbed thoroughly with tincture of green soap and the surgical area sterilized with tincture of metaphen.

5. Pentothal sodium was given intravenously by the drop method.

6. A silk suture was sewn through the tip of the tongue so that the tongue could be retracted. A clear air-way was thus facilitated at all times.

7. Gauze packs were placed on the side of the tongue to catch any foreign material.

#### **Surgical Procedure**

1. An incision was made at the neck of the anterior teeth.

2. The tissue was retracted and lifted with a periosteal elevator, all of the alveolar bone being exposed.

3. A suction tip was used frequently to remove accumulated blood and debris throughout the operation.

4. The teeth were loosened with elevators and removed.

5. With a large rongeur forceps, the bone was cut to the same contour and depth as shown on the model. (Considerable arterial hemorrhage may be expected at this point. It may be controlled by crushing the bone against the spurting artery with a mallet and a blunt instrument.)

6. The first denture try-in was at-

tempted. Inasmuch as the denture did not seat properly, additional bone was removed until the denture went to proper position.

7. The entire alveolar process was trimmed and smoothed with bone files and the tissue approximated and sutured with silk.

8. The labial frenum was severed to permit better denture adaptation. (Sutures are necessary because this is a highly vascular area.)

The mouth was now ready to receive the denture. An ointment combining antiseptic and local anesthetic properties (butyn-metaphen dental ointment) was applied to the surface of the denture coming in contact with the operative area. Relaxation made

### **Postoperative Orders**

1. Cold packs applied to the face continually to prevent swelling and hematoma about the face and eyes.

2. Diet: liquid, soft; nothing salty, hot, or spicy.

3. For pain: empirin compound with codein  $\frac{1}{2}$  grain every three or four hours when necessary to relieve pain.

4. A mouthwash consisting of the following formula:

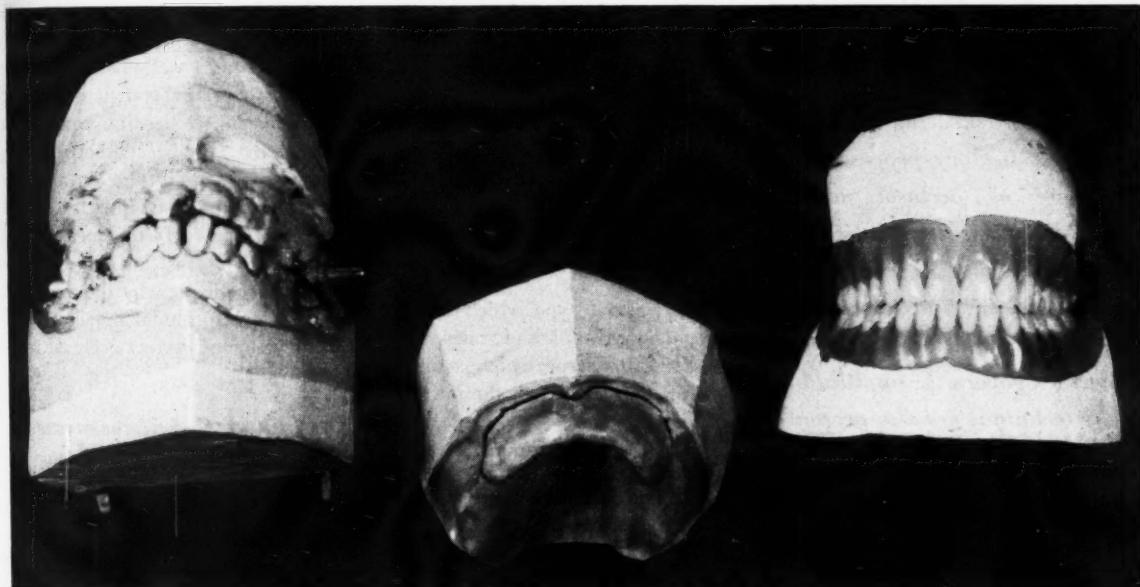
Tincture of Iodine	2.0 c.c.
Alcohol	6.0 c.c.
Glycerin	2.0 c.c.
Phenol	4.0 c.c.
Aqua destillata	qsad 30.0 c.c.

Directions: 15 drops in half a glass.

from anesthesia, the new denture, to which a coating of butyn metaphen dental ointment had been applied, was adapted to proper seating. The denture was kept in the mouth at all times, being removed once or twice daily for cleansing purposes only. The patient was hospitalized for two or three days. (The period of hospitalization depends on the extent of edema and the patient's general condition.) Two days later the patient reported to the office and sutures were removed.

### **Conclusions**

1. Resorption of bone varies with each person. An adjustment (relining) may have to be made at any time



possible by pentothal sodium permitted manipulating the mandible to proper occlusion. The denture was removed from the mouth and compound tincture of benzoin applied to the surgical area to coat and seal the mucous membrane. The patient was then taken to her room to recover consciousness.

**5. Left: Evidences of maloccluded dental arch; protrusion and overbite. Center: Alveolectomy completed on the model. Right: Dentures finished before surgery.**

ful of lukewarm water every four or five hours as a mouthwash only.

When the patient had recovered

between three and twelve months after surgery.

2. The patient whose case is reported here presents an improved appearance, a new personality, a new outlook on life, and improved health.

*South Chicago Community Hospital  
2320 East 93rd Street.*

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# OCCLUSAL ADJUSTMENTS

JOHN C. HEISLER, D.D.S., Chicago

## DIGEST

*The relation of the posterior tooth surfaces to the lateral-to-centric movement of the mandible determines the efficiency of the cutting or shearing operation in the masticatory process. The technique of occlusal adjustments described here is directed toward restoring or improving this specialized function of the teeth. Fundamentals of mastication which govern the application of the technique are also presented in this discussion of occlusal adjustments.*

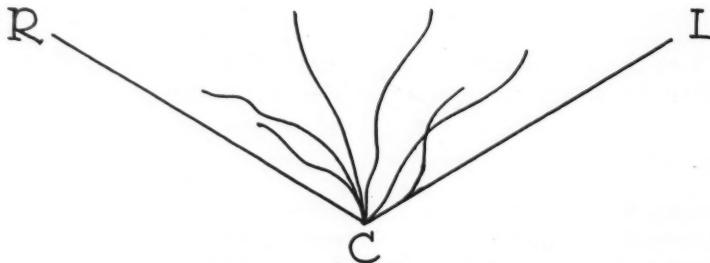
## Types of Mandibular Movements

IN OCCLUSION there is only one constant factor—the right and left lateral-to-centric occluding movement of the mandible. The intersection point formed by the paths of this pair of movements determines the centric position of the mandible. All other occluding movements of the mandible operate in a variable manner. For this reason functional movements may be classified thus:

1. A constant type which always follows a common path of travel.
2. A random type which assumes any direction adapted to the purpose at hand.

Figure 1 is a diagrammatic representation of these movements. They can be demonstrated by the use of special equipment. The application of the constant factor to determine occluding relationships forms the basis of the technique of occlusal adjustments discussed here.

A general picture of mandibular



**I.** (R) Right lateral position of the mandible; (L) left lateral position of the mandible; (C) centric position of the mandible which is the intersection point of the paths travelled by the right and left lateral-to-centric occluding movements of the mandible.

function is obtained by observing the mandible at work. By its action it reveals what it must do in order to achieve mastication with the various arrangements and conditions of the teeth. The mandible in action will either display its natural rhythm (in the case of teeth well-placed for synchronized operation), or it will adapt its movements (to peculiar conditions of the teeth). The breach between the pattern of rhythmic function and the pattern of function adapted to dental structures represents the measure of deviation. The fact that subjects accomplish mastication by the adaptive property of mandibular movements is *not* the gauge of correct occlusal relationship.

## Purposes of Adjustments

The ultimate aim of occlusal adjustments is twofold:

1. To restore the natural rhythm of mandibular function in the operation of the masticatory process.
2. By so doing, to dispel the tendency of the subject to attempt corrections by gnashing the teeth during periods of abstraction and sleep.

Excessive use of the teeth appears to be the cause of traumatic occlusion; therefore, the ability of the subject to function naturally eliminates the stimulus which promotes excessive use.

Mandibular movements have definite functions in relation to the teeth. The constant type, which always follows a common path of travel, actuates the cutting or shearing operation of the posterior teeth and the crushing operation when centric position of the mandible prevails. The random type of movement actuates the incising op-

eration of the anterior teeth and those intermediate functions which are not in the path of the lateral-to-centric movement.

Inasmuch as the cutting or shearing operation of the posterior teeth is of especial concern in the masticatory process, it is important to consider how the tooth surfaces are related to the lateral-to-centric movement in order that this specialized function may be restored or improved by occlusal adjustments.

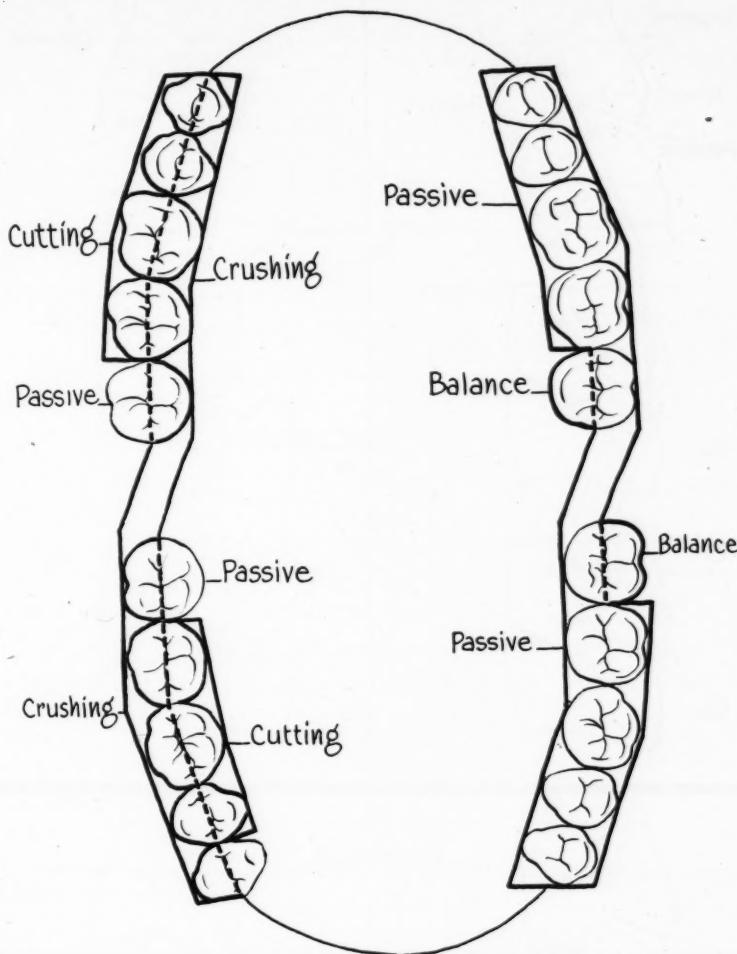
### **Fundamentals of Mastication**

In Figure 2 the cusp surfaces are represented diagrammatically to show their organization in the operation of the masticating process for the right side. Figure 3 illustrates some features which cannot be seen in Figure 2.

1. Chewing is accomplished on one side at a time and the masticatory movement is a diagonal movement from lateral to centric. *Cutting surfaces engage at the beginning of the chewing stroke and crushing surfaces engage when the stroke ends; by this double action, mastication is achieved.* The opposite side of the dentition will be passive during this operation; that is, no pressures will be brought to bear on the passive teeth until centric position is reached. Therefore, it might be said that there are two machines for mastication: one for the right side and one for the left.

2. Because both sides are rather closely related, each must be prevented from interfering with the operations of the other. The only connection between the working teeth and the passive side is a balancing contact. The distal pair of teeth on the passive side performs this balancing operation.

3. The teeth which contain the cutting surfaces must stand erect in relation to the occlusal plane (Fig. 4). In this erect position, cutting surfaces are within reach of the mandible so that contact can be obtained for a cutting or shearing action. The erect position of these teeth also influences the angles of the crushing surfaces; they are made less steep and therefore will remain out of contact on the pas-



**2. Organization of the cusp surfaces on the right side as they operate in the masticating process. The names indicate the operations of the cusp surfaces. Surfaces of like kind are grouped. The specialized surfaces are marked separately. "Passive" indicates that surfaces do not perform in the operation. Each group performs a given operation at a given time; therefore, some groups will be passive while others are working.**

sive side while the other side is operating.

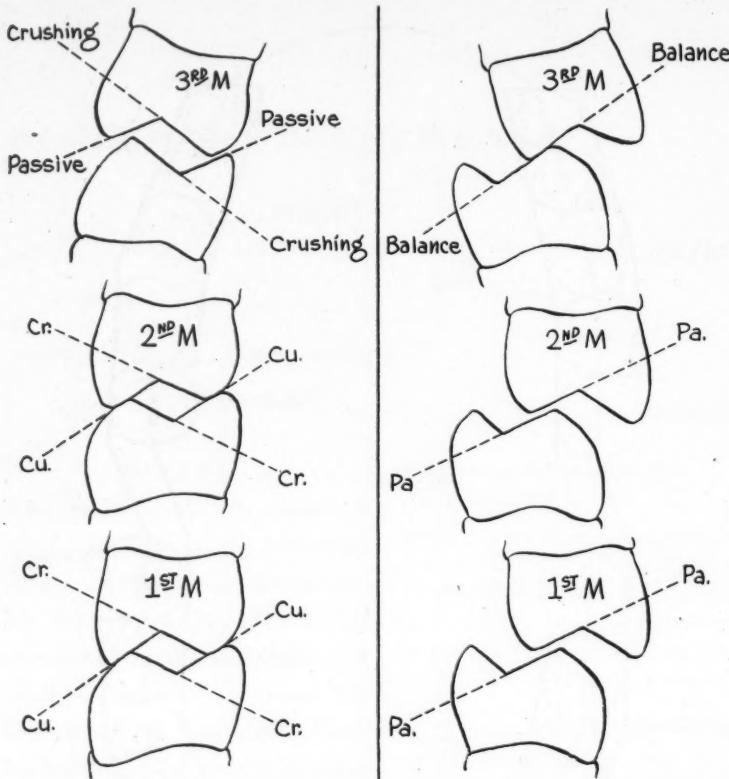
4. The balancing surfaces are always located in the distal pair of occluding teeth. They operate in the reverse order because they must be in agreement with the cutting operation of the opposite side. To accomplish this purpose, these teeth lean in relation to the occlusal plane. It may also be mentioned here that the term "balanced occlusion" actually refers only to the balance related to the cutting operation of the posterior teeth; the remaining operations which make

up the masticatory process do not require a balancing influence.

### **Making Occlusal Adjustments**

With these fundamentals of mastication in mind, we can consider the application of the treatment.

**On Anterior Teeth**—Figure 5 illustrates how the anterior teeth should be reduced if they prevent the posterior teeth from making contact in lateral operations. The anterior teeth, in most cases, require the stabilizing influence of centric relation; adjust-



**3. Additional features not evident in Figure 2. (The bicuspids are omitted because their operations are the same as those of the first and second molars.)** Notice that the balancing surfaces operate only in connection with the cutting surfaces and that the operations of these teeth are unlike those of the other teeth.

ments therefore should not disturb the centric contact.

**On Posterior Teeth**—Figure 6 illustrates how surfaces are cut on the posterior teeth. These examples can be applied to any surface of like kind which may require reduction. Cusp surfaces are reduced for the following reasons:

1. Surfaces make contact out of turn. The surfaces that may need reduction could be:

a) Crushing surfaces on the working side, depending on the movements used for chewing.

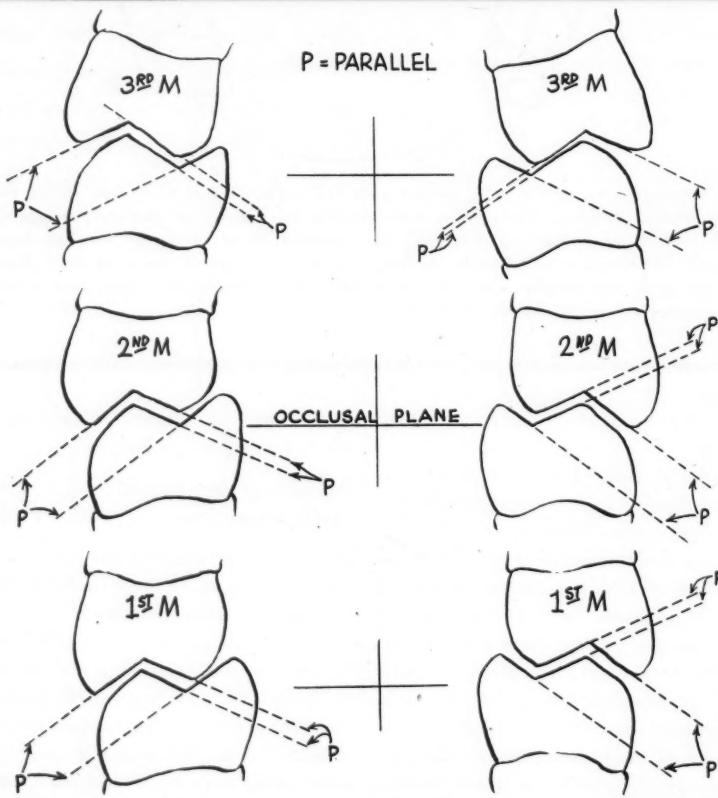
b) Passive or balancing surfaces on the passive side of the denture.

c) Passive surfaces located in the distal pair of teeth on the working side.

2. The cutting surfaces make contact in an uneven manner. These pressure areas are equalized by reduction of the opposing contact as shown in the diagram for cutting surfaces.

These two reasons for adjustment cover all conditions of functional occlusion of the posterior teeth, including centric relation. However, centric relation is also related to the opening axis; therefore, in cases which cannot be adjusted to lateral operations, centric relation can be established by opening and closing movements.

**Use of Carbon Paper**—Because the masticatory function operates without conscious control, the patient cannot be expected to help beyond the point of being at ease. The stimulus to mas-



**4. Teeth which carry cutting surfaces must stand erect in relation to the occlusal plane. Cutting surfaces of teeth in this erect position are within reach of the mandible so that contact can be made for a cutting or shearing action. The crushing surface angles in such teeth are less steep and therefore remain out of contact on the passive side while the active side is operating.**

tication is something to chew. For this purpose carbon paper may be used.

1. Have the patient perform about three chewing movements. The marks which appear on the tooth surfaces will be those which offer the best mechanical advantage for mastication. In other words, the chewing record, as shown by the carbon marks, reflects the efficiency of the masticatory machine.

2. Analyze these marks by considering which surfaces are performing the masticatory function. Are these the correct surfaces for the operation being performed? Remember:

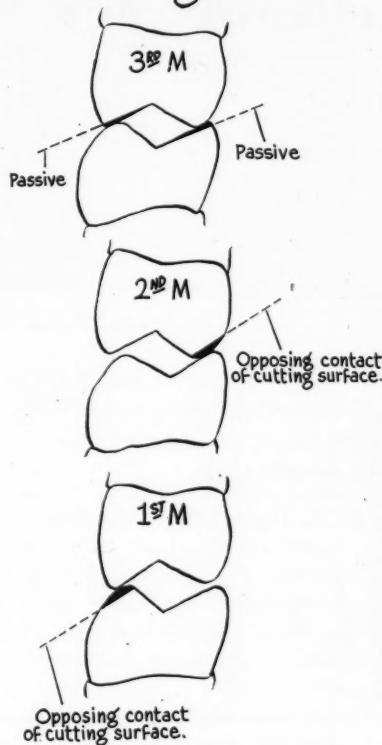


### 5. Reducing anterior teeth to allow posterior teeth to make contact with lateral operations.

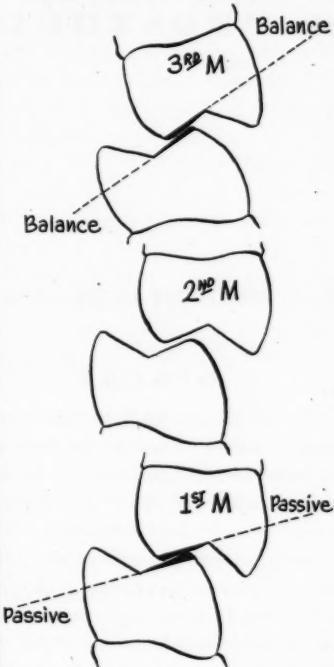
- Cutting surfaces operate first.
- Crushing surfaces operate last.
- Passive surfaces should not make contact.
- The anterior teeth should permit clearance for the lateral segments to operate.

Now, if the cutting surfaces have no

### Working side



### Passive Side



### 6. Reducing cusp surfaces on posterior teeth. Any surface of like kind can be reduced in the same way.

carbon marks, the pressures are on the other surfaces; otherwise, the mandible would have used them in the first place. Therefore:

3. Reduce the surfaces which are operating out of sequence until the cutting operation can function first and in unison with the balancing surfaces.

After the initial corrections have been made, the patient will respond with each successive adjustment to the enhanced mechanical advantage produced. When adjustments are com-

pleted, this mandibular action will be in its natural pattern and the teeth also will be in agreement with it.

#### Comment

After adjustments, most cases will have been reduced slightly in the vertical heights of the denture. This change is not objectionable. The increase in comfort and the satisfaction which the adjustment brings to the patient is the gauge of the merit and the accuracy of the procedure.

55 East Washington Street.

# A PROSTHETIC SHORTCUT

C. L. MEISTROFF, D.D.S., Richmond, Virginia

## DIGEST

**The patient's old denture can sometimes be used as the base for a combined impression tray and bite-block and as a pre-impression check on retention. The combination provides an accurately fitting accessory, the use of which does not affect precision in technique. It saves time for both the operator and the patient at the chair and for the operator in the laboratory.**

**Refinements in the methods of impression removal and of lining the periphery with wax, instead of cutting a groove in the model, are apparent.**

A PROSTHETIC timesaver that does not sacrifice technical precision is a method which utilizes the patient's dentures as combined bite-blocks and impression trays. This same method can be used whether one denture is being replaced or both. The several cases in which the described tech-

nique was employed have shown good function, retention, and stability.

## Procedure

1. (Figs. 1A and 1B) Relieve the upper denture of all peripheral undercutts and overhang, leaving the frenum slot free. Lightly touch the height to roughen it superficially so that the low-fusing compound will adhere better.

2. (Fig. 2) Apply low-fusing compound to the peripheral height. (Hold the denture with the teeth towards the palm and the fingers grasping the teeth. The hand will not be in the way and a clear unobstructed view can be had without much manipulation.)

a) Extend the compound from an eighth to a quarter of an inch inside the denture base all the way around.

b) Postdam for about a half inch at the posterior, thinning in width as the tuberosities and heels are approached.

c) Place the compound thinly on the inside and at the posterior; thicken it up on the border and periphery.

After the compound has been applied, go over the entire application gently with a Hanau or similar blowtorch, being careful not to cause the material to run or burn. The purpose

is only to remove wrinkles and folds and to smooth out the application. As soon as this is accomplished, dip the entire denture in hot water to maintain pliability of the compound and to eliminate the heat sting; then the patient is able to tolerate the tempered material.

Insert and press to place, trimming as the denture is seated. Remove; check for setting and adaptation; trim. Replace, remove, and recheck. Soften each area sectionally as needed and recheck. Take special care that the frenum, peripheral heights, and muscle attachments are perfect.

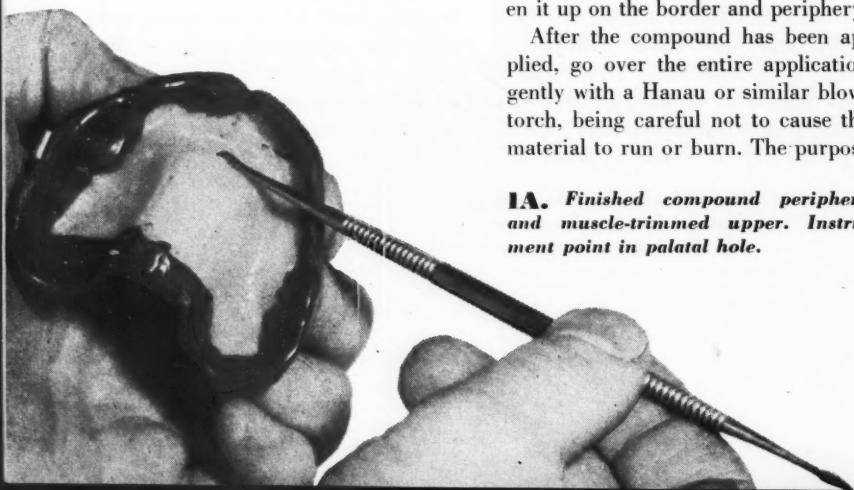
When the denture has been stabilized and the suction improved, the operator is ready for the next step.

3. (Figs. 2 and 3) Soften a roll of wax. Give it thickness by folding it lengthwise. Place it on the teeth of the denture and lute with a spatula. Remove all excess and prepare as though it were a bite-block. *Chill for five minutes in icewater.* Replace in the mouth and check for closure. Proceed as with a bite-rim and properly close. When the mandibular regis-

**IA. Finished compound periphery and muscle-trimmed upper. Instrument point in palatal hole.**



**IB. Finished lower snap compound.**





5. Finished upper and lower impressions.

tion has been obtained, remove all excess and check again for correctness. Chill for another five minutes in ice water before proceeding.

4. (Fig. 1) Up to this point the operator has had ample opportunity to observe the retentiveness of the denture and how it seats itself; to check on the bite and on closure.

With a large bur drill a hole in the palatal area of the denture base lingual to the centrals (Fig. 1); do likewise between the cuspids and first bicuspids. These holes play an important role in providing a means of removing the excess wash and the finished impression without mishap.

Fill the denture with the wash and place it in the mouth. Have the patient bite and hold it in place; or hold it there by finger pressure. Work and trim the wash around the muscle attachments and periphery.

When set, clear the excess wash

from the palatal hole behind the centrals. When the patient can affirm the fact that the soft tissues have been reached, apply air at a pressure of about 25 or 30 pounds to the impression, running the nozzle up into the hole.

The entire combination will separate cleanly and dry without a single shred of mucus adhering to it, without being drenched with saliva, injured or broken in any way (as is the case in trying to remove with water, force of fingers, or instruments).

5. (Figs. 4 and 5) A combination bite-block, impression of the upper arch, and the original denture setup as it is to be remade are now on hand. The procedure thus eliminates several interim visits and saves time for both the operator and the patient.

To increase retention without irritating the soft tissues, the following procedure is used:

a) With a thin-bladed spatula heated quite hot, apply blue inlay wax to the same areas as the low-fusing compound was applied to in step two.

b) Place the wax thin and in the same overall dimension. Having the spatula hot will prevent the wax from forming in too great a bulk at any one point.

c) Flow it around the denture as previously stated and see particularly that the frenal area gets its outline, also.

This technique is much better than digging a heavy groove on the model that tends to produce a deep, sharp ridge inside the denture which irritates the tissues. Such a groove can only be short-lived; it will have to be removed so that the patient can tolerate the denture. Then suction is greatly interfered with and the denture is a failure.

### Conclusions

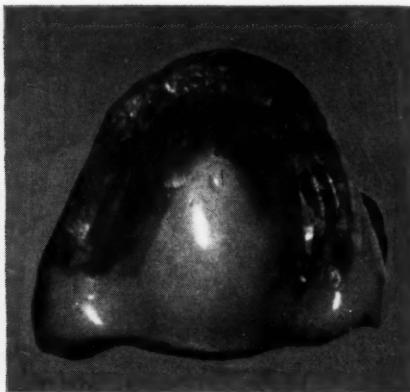
The building of the peripheral border in such a way as to include the mucobuccal fold in its entirety helps in two ways:

1. Builds up facial contours as needed.
2. Assists retention a) by providing a complete peripheral seal in the mucobuccal fold through the prevention of food pack formation and b) by allowing for better adaptation to the arch of a flange that does not permit leakage of air.

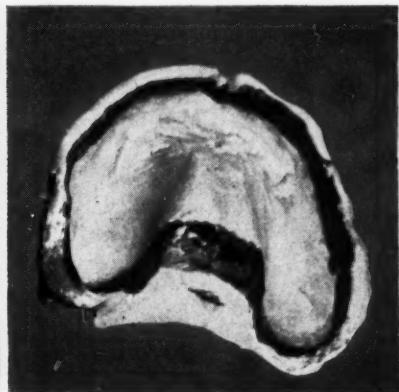
113 East Grace Street.



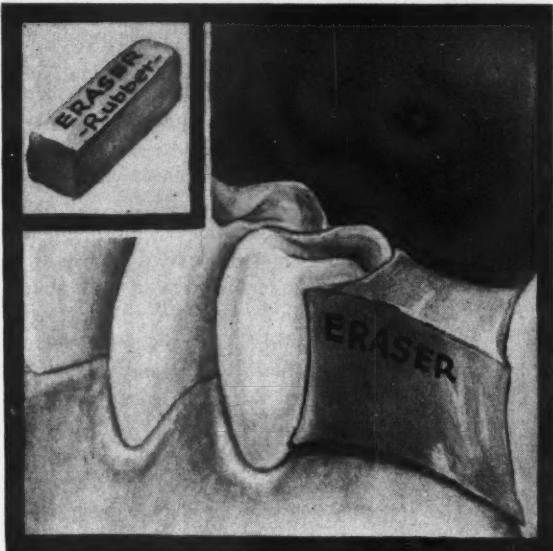
2. Front view of combined bite and ridge register.



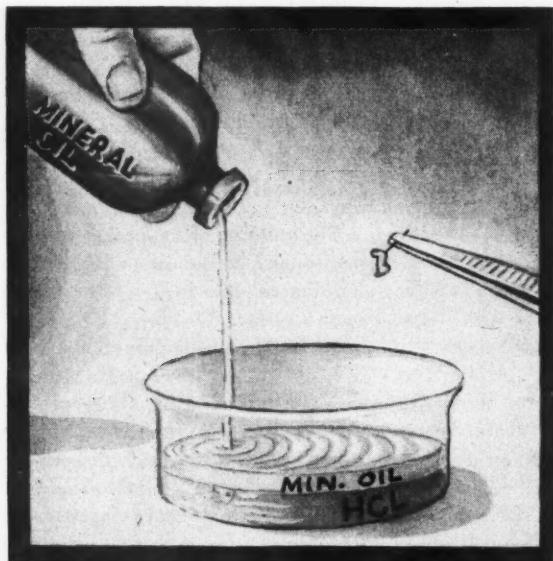
3. Ridge view of same. Hole in palate cleared of wax.



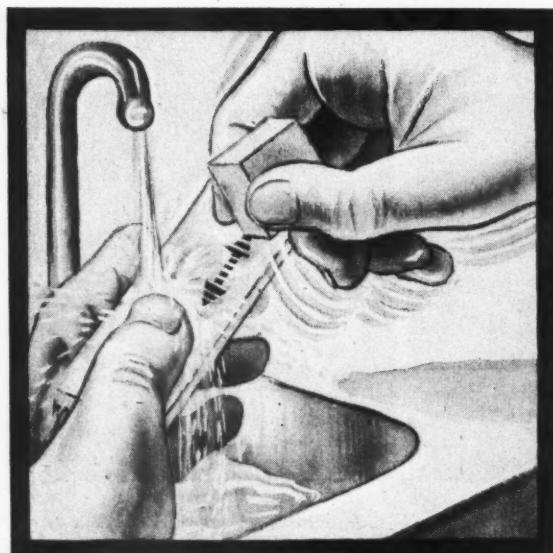
4. Finished upper impression and blue-wax flange.



1



2



3

## Clinical and Laboratory

### Method of Space Opening

W. A. Smith, Jr., D.D.S., Camilla, Georgia

1. Sometimes in the interval between the time an impression is taken and a removable bridge is finished, the edentulous space is reduced in size. When the bridge is placed in the mouth, it does not go to position. In such cases it is necessary to open the space without injuring the bridge or the teeth. Select an ordinary rubber eraser and trim to approximate size, about 2 millimeters *longer* than the space. Make the rubber block concave on the mesial and distal where it is in approximation with the teeth. Force the block to position and allow to remain for twenty-four hours. The block will act as a wedge to open the space.

### Pickling Method for Castings

Stanley G. Haber, D.D.S., New York

2. In order to control the noxious fumes resulting from pickling castings in acid, pour a small amount of mineral oil over the hydrochloric acid to form a film. This procedure will control the obnoxious gases formed in pickling metals.

### Cleaning Mixing Slabs

J. Daly McDonogh, L.D.S., Tipperary, Eire

3. Select a piece of pumice stone about one-inch square. Run cold water on the mixing slab and rub with the pumice stone. This is a speedy and useful method for cleaning slabs and it will not scratch the surface of the slab.

### READERS are Urged to Collect \$10.00

For every practical clinical or laboratory suggestion that is usable, DENTAL DIGEST will pay \$10.00 on publication.

You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make

## or SUGGESTIONS . . .

### A Simplified Cooling Method

**A. S. Lenk, D.D.S., Beaver Falls, Pennsylvania**

4. To avoid the necessity of storing ice in the summer months to cool water or other liquids, place the liquid in a container widemouthed enough to admit a thermometer such as is used in developing solutions. Wrap gauze around the container and spray the gauze with ethyl chloride until the thermometer registers the desired temperature.

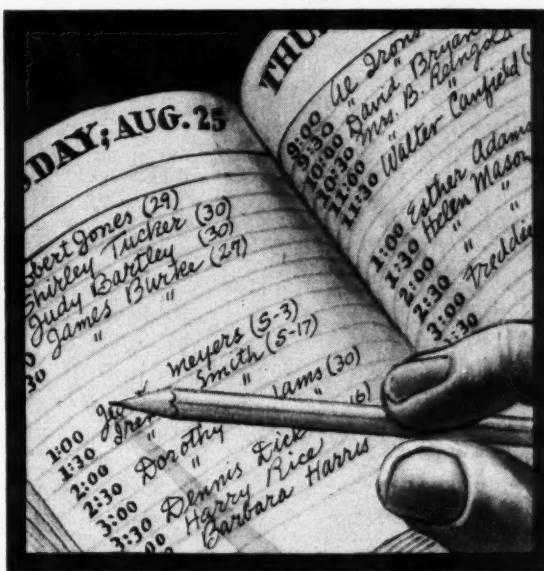


4

### The Dental Appointment Book

**Miss Ruth Dowd, D.A., Detroit**

5. When a patient calls for an appointment, make two or three in advance. When the first appointment is made, write the date of the second appointment in parenthesis opposite the patient's name. Do the same for each succeeding appointment. In this way the patient will not be required to wait for long intervals between appointments. The method also saves time in looking through several pages of the appointment book to determine the time of a second appointment. It is also a good idea to make successive appointments on the same day and at the same time. In this way it is easy for the patient to remember his appointment.

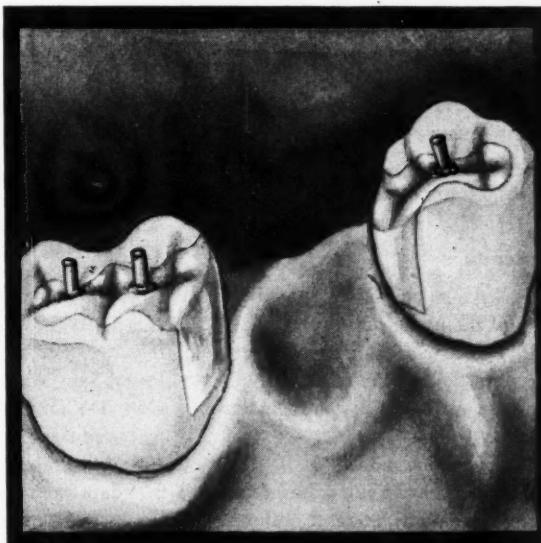


5

### Positioning of Castings in Fixed Bridge Construction

**Walter Spivack, D.D.S., Philadelphia**

6. To ensure proper positioning of abutment castings, attach one or two  $\frac{3}{16}$ -inch pieces of wood applicator stick to each casting with sticky wax. These wooden lugs will be engaged in the impression material to ensure proper positioning.



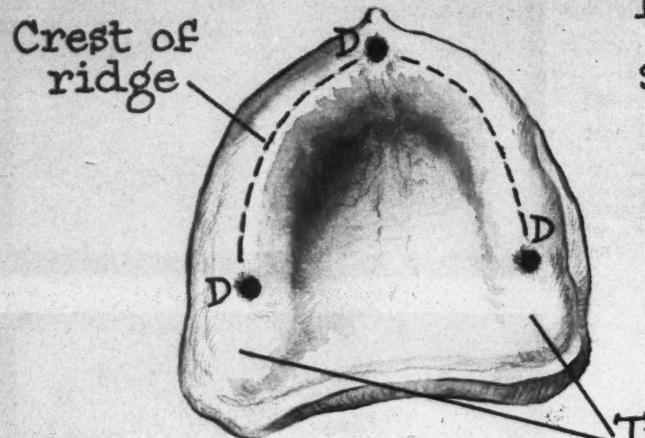
6

suitable illustrations; write a brief description of the technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time.

Turn to page 255 for a convenient form to use.

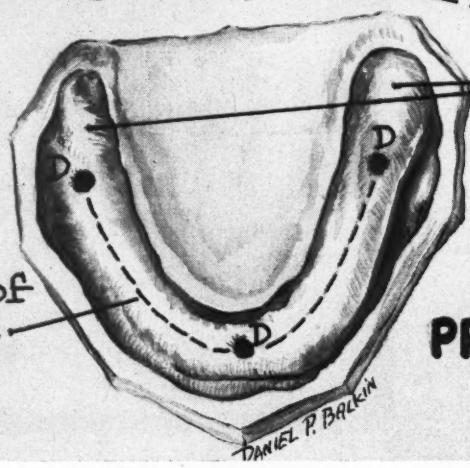
Send your ideas to: Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evans-ton, Illinois.

## UPPER PRELIMINARY MODEL



D.....Depressions

SECTION THRU MID-LINE



## LOWER PRELIMINARY MODEL

DANIEL P. BALKIN

Fig. 7.—The most important step in this technique is the sinking of depressions in the preliminary models prior to adaptation of

the baseplates. The elevations thus produced in the final trays act as stops which assist in obtaining nonpressure impressions.

### A Simple Technique for Preparing Final Trays for Nonpressure Impressions in Full Dentures

Francis O. Musarra, D.D.S., Marietta, Georgia

#### Procedure

1. Take a snap compound impression of the upper and lower ridges.
2. Remove the undercuts and cut down on the margin of the upper impression until it is slightly underextended.
3. Pour stone models.
4. Using an old vulcanite bur, sink three depressions, about 2 millimeters deep, along the crests of the ridges.

(On the upper impression, one depression would be placed on each side, just anterior to the maxillary tuberosity, and one in the midline anterior to the incisal papilla; on the lower, one would be placed on each side just anterior to the retromolar pad, and one in the midline.)

5. Adapt the baseplate, being sure to adapt well into the depressions. Cover with a layer of compound for strength.

#### Results

The final trays should have three raised elevations on the inside. When the trays are seated, these elevations, by acting as stops, afford a nonpressure impression. If too much force is exerted in seating the trays, the elevations will penetrate the impression material. The pressure can be relieved by scraping the penetrated areas with a warm spatula. This will ensure that no pressure spots occur.

**The Reconversion of an  
ANALGESIA MACHINE  
for Use in  
OXYGEN THERAPY**

**HENRY FISCHER, D.D.S., Bronx, New York**

**DIGEST**

*The substitution of a small oxygen tank, the addition of a thin tube to the heavy one present, and the attachment of a 20-gauge hub needle converts an analgesia machine into a low-cost oxygen apparatus. This is suggested for effectively controlling the administration of oxygen in the treatment of some periodontal conditions.*

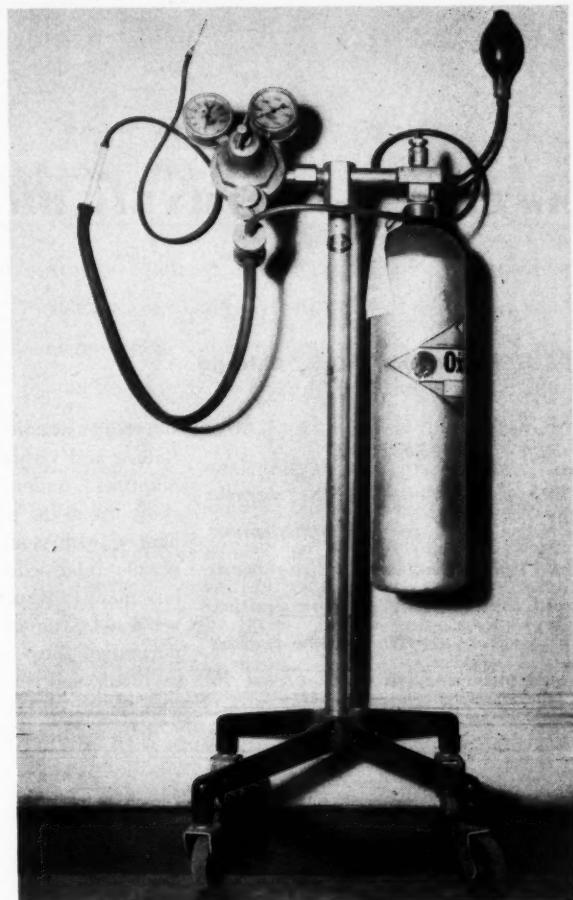
AFTER READING the article by Rowe Smith, D.D.S.,<sup>1</sup> several gingival disturbances came to mind which might respond to oxygen therapy. The problem is to utilize dental apparatus already in the office.

A piece of equipment available in most dental offices is an analgesia machine. In order to reconvert it to an oxygen machine the following changes can be made:

1. A tank of oxygen is ordered. This is put on the machine and the nitrous oxide tank removed.
2. The mixing bag is disconnected from the rubber tubing. (This tubing is short and heavy and about one-half inch in diameter. For convenience, a longer, thinner working tube is needed.)
3. To connect the thin and the heavy tube, the barrel of an ordinary 1- or 2-cubic centimeter medical syringe is slipped into the heavy tubing, the thinner tubing being attached to the nozzle where the needle is usually placed.
4. To the working end of the tubing, a 20-gauge needle with a hub is attached. This can be removed for easy sterilization.

**Operating the Apparatus**

1. The oxygen tank outlet is opened and the tank dial allowed to reach 1500.



111 East 167th Street.

<sup>1</sup>Smith, Rowe: Oxygen Therapy in the Treatment of Vincent's Infection and Other Periodontal Conditions, DENTAL DIGEST 53:14-21 (January) 1947.

## An Engineered ACRYLIC BRIDGE

PAUL F. GRIMM, D.D.S., Chicago

### DIGEST

*The deficiencies of the acrylic bridge lead to disappointment and dissatisfaction for the patient and loss of time for the dentist. To protect acrylic pontics against accidents a rigid basket cast in gold is suggested.*

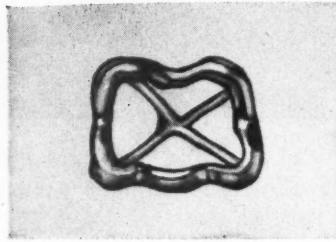
TOO MANY acrylic bridges are a gross failure and virtually all are a disappointment under real stress after a short time. A properly engineered bridge with sound abutments and acrylic intermediate teeth, however, has many advantages over the conventional type of bridge. Most important of these is that it is less apt to break and yet conforms to high esthetic standards.

Some of the reasons for an urgent

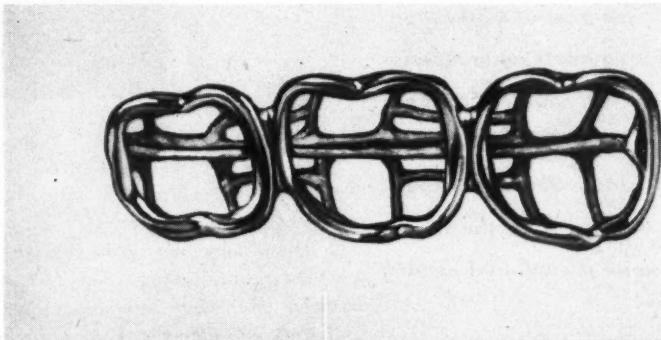
need to change the construction of the acrylic bridge are that (1) acrylic pontics break free from the retention bars now used; (2) they loosen in the bar and become cracked and discolored; and (3) they break down. Metal cusps could be used but they do not satisfy the patient who insists on little or no metal showing.

The "engineered bridge" eliminates these faults. It is a step forward in meeting the problems of the acrylic bridge.

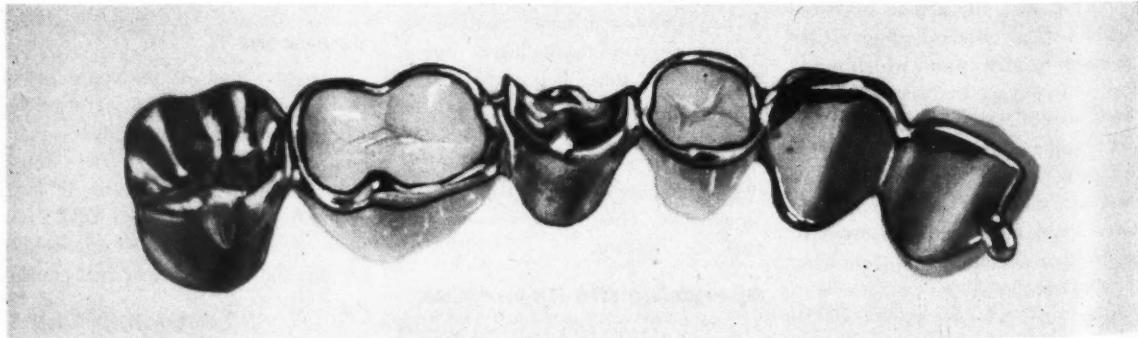
5 South Wabash Avenue.



**1.** For individual pontics, a rigid (bell-shaped) basket is cast which is designed to prevent them from breaking, loosening and rotating around the bar, and wearing down on the occlusal surface.



**2.** For an extended bridge of two or more pontics, a reinforcing bar is added to the baskets for additional strength where it is most needed.



**3.** The entire gold casting is firmly encased in the acrylic and no gold touches the gingiva at any point.

## The EDITOR'S Page

THIS is Child Health Month. Every year the professional journals are filled with high-sounding articles imploring dentists to give more attention to the child in dental practice. So far there has been no notable increase in the number of dentists showing a disposition to engage in limited practice for children. Whenever a dental society program features a speaker on pedodontics, the members stay away from the session in eloquent numbers.

The child in the average dental office is not greeted with enthusiasm and the services that he receives are frequently of an inferior quality. Many factors are responsible for this unhappy situation. Both the parent and the dentist are to blame; the parent by not being disposed to pay a fair fee, the dentist by his ineffectual presentation of the case for adequate dental care for the child.

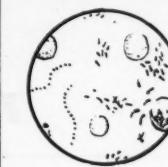
Even if all dentists had an all-prevailing love for the child patient and the honest desire to meet him in practice and extend to him the best services known, there would be no appreciable reduction in the incidence of dental caries. By a program of early dental examination, the beginnings of dental disease can be detected and early treatment instituted. Such a commendable program, however, does little to *prevent* dental caries although it does control the sequelae of dental disease. The early recognition and treatment of a disease state is not prevention. Prevention means total freedom from disease. This ideal can only be reached when we discover a specific causative agent and a specific method of controlling the etiologic agent of caries. The mechanism that destroys the disease-producing causative factor may be a chemical process, an antibiotic, an enzyme inhibitor, a product of nuclear fission, or something hitherto unknown.

Until we find a specific antagonist for the bacteria that are associated with dental caries, we must continue to be more or less empirical in our programs of control. It is quite possible that the local application of sodium fluoride, urea, the ammonium ion, vitamin K, one of the amino acids, or one of the quinones may produce an effective immunity to caries. Of one thing we are reasonably sure: Some relationship exists between the amount of sugar available for degradation and the amount of caries. A simple formula might read: A reduction in the amount of refined sugar is equalled in direct proportion by a reduction in the incidence of tooth decay. In general, all investigators are in agreement on the pernicious role that sugar plays in caries.

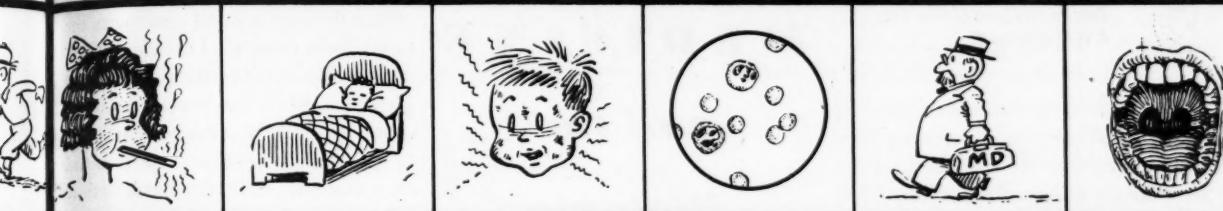
If this formula is correct, it should appear as a project within reason to reduce the consumption of sugar by the American people. Whoever is this naive does not reckon with the powerful forces at work through the expenditure of millions of dollars a year to promote the sale of sugars in various forms. Whether the sugar masquerades in liquid as a soft drink, in a solid as candy, or in a stick of chewing gum, the fact is that refined sugar in the mouth in any combination is the pabulum upon which bacteria thrive and produce the acids that destroy the hard dental tissues.

There is probably little that the dental profession can do to campaign effectively against the powerful interests that supply sugar to our people. Each of us can do a small part by emphasizing nutrition to the parents of our child patients, telling them what the positive requirements are for adequate nutrition and what the negative factors are. Satisfactory nutrition is taking into ourselves the things that are good and rejecting the bad. Refined sugar in every form is "Dental Public Enemy Number One."

# DIFFERENTIAL DIAGNOSIS OF

					
	<i>Incubation Period</i>	<i>Quarantine</i>	<i>Duration</i>	<i>Causative Factors</i>	<i>Incidence</i>
<b>SCARLET FEVER</b>	<b>1-7 DAYS</b>	<b>3-4 WEEKS</b>	<b>2-3 WEEKS</b>	<i>Spread by CONTACT or FOMITES</i>	<i>Greatest between 5-10 yrs.</i>
<b>MEASLES</b>	<b>7-18 DAYS</b>	<b>2 WEEKS from onset</b>	<b>2 WEEKS</b>	<i>Filterable Virus. Contact or air-borne</i>	<i>3-5 years</i>
<b>GERMAN MEASLES</b>	<b>7-21 DAYS</b>	<b>LITTLE VALUE</b>	<b>4-7 DAYS</b>	<i>Filterable Virus (?) Droplet secretions of nose and mouth.</i>	<b>5-15 YEARS</b>
<b>DIPHTHERIA</b>	<b>2-7 DAYS</b>	<b>10 DAYS TO 3 WKS.</b>	<b>3 WEEKS</b>	<i>Corynebacterium Diphtheriae. Direct transmission</i>	<b>1-5 YEARS</b>
<b>CHICKEN POX</b>	<b>2-3 WEEKS</b>	<b>10 DAYS from onset</b>	<b>1-3 WEEKS</b>	<i>Virus. Direct contact or air-borne</i>	<b>2-6 YEARS</b>
<b>SMALL POX</b>	<b>7-18 DAYS</b>	<i>From fever to disappearance of crusts from body.</i>	<b>2-6 WEEKS</b>	<i>Filterable Virus. Direct contact</i>	<i>Highest in unvaccinated children</i>
<b>TYPHUS</b>	<b>5-15 DAYS</b>		<b>12-14 DAYS</b>	<i>Rickettsia Transmitted by rat and body louse</i>	<i>Unreliable</i>
<b>ROCKY MT. FEVER</b>	<b>4-12 DAYS</b>	<i>NOT communicable person to person</i>	<b>3-4 WEEKS</b>	<i>Rickettsia rickettsii Can infect thru unbroken skin</i>	<i>Occupational in western states Recreational in eastern states</i>

# OF EXANTHEMATOUS DISEASES



ence	Fever	Onset & Course	Eruption	Leucocyte Count	Treatment	Enanthem
test een Yrs.	Sudden rise Fall by Lysis	Vomiting— sore throat chills & fever	Red papules on white base Erythema Flushed face	Polymorpho- nuclear leucocytosis	Isolate Rest Liquids. Intramuscular antitoxin	Red puncta on palate & pharyn- geal mucosa. "Strawberry" tongue.
5 RS	High at first. Fall before erup- tion—then rises with eruption.	Catarrh Fever Lacrimation Conjunctivitis Sneezing Dry cough	Brownish-red maculopapular rash on face 3-5th day.	Leucopenia with decrease of lymphocytes	Isolate Ventilate well. Steam inhalations; rest; liquids.	Koplick's spots on buccal mucosa
15 RS	MILD	Catarrh with fever. Posterior auricular and occipital gland swelling.	Rash pale, red macular, spread- ing over torso Fades 2-3 days	Leucopenia with a relative lymphocytosis	Rest Liquids Soft diet Cold compresses to enlarged glands	Oral & pharyn- geal mucosa usually congested
5 RS	MILD	Sore throat Prostration Headache Vomiting	Uncommon	Moderate polymorpho- nuclear leuco- cytosis.	Early antitoxin Several weeks of bed rest. Isolate!	Usually on body only.
6 RS	MILD	Itching, rash fever, chills nausea, headache. Onset some- what abrupt.	Rose-colored macules on face & torso.		Isolation Zinc stearate for pruritus	Vesicles & ulcers on any mucous mem- branes.
st in nated ren	High at first. Drops with appearance of rash. Rises with pustules.	Fever, chills, headache, malaise.	Papular stage Vesicular stage Pustular stage Crusting stage Lasting 40 days	Polymorpho- nuclear leuco- cytosis with later lympho- cytosis	Isolate. Bed rest Bland diet Burrows solution for body itching	Macular & papular enanthem
able	High—reaches maximum by 1st week. Lasts 14-16 days.	Malaise, head- ache, nausea and vomiting. Delirium.	Papulo-macules on trunk limbs or face. Appears 4-6 days after onset of fever.	Normal to <b>12,000</b>	No specific treatment Bed rest & good nursing	
national n states nial n states	High at first 16-21 days.	Chills Photophobia Myalgia & Ostalgia Rapid fever	Maculopapular rash on extremities extending to entire body within 48 hrs.	<b>10,000—</b> <b>18,000</b>	Sponging & antipyretics for fever control. Liquids.	Buccal mucosa & soft palate.



## Immunization in Childhood

Certain communicable diseases may attack children. Frequently they attack with severity and leave behind conditions which exist for life. Most of these diseases can be prevented by following a routine procedure of vaccination.

Protective measures are required by law in some states. In addition to the legal compulsion in some states there is a widespread educational program being carried on in all states. It certainly is better to prevent disease rather than to depend entirely on treatment after the disease has occurred. This is particularly true in schools where disease can easily be spread by unavoidable contacts.

Smallpox vaccination should be given at the age of 2 to 6 months. This vaccination should be repeated between the ages of 6 to 12 years or during an epidemic of the disease.

Immunization for whooping cough may be given at the age of 6 to 9 months. Along with it the immunization for diphtheria is frequently given. After 6 years of age the whooping cough vaccination is of questionable value.

When the diphtheria immunization is not given with whooping cough, it should be given at 9 to 12 months. Sometimes tetanus immunization is combined with diphtheria. To maintain tetanus immunity effectively, a yearly booster immunization is necessary. When children between the ages of 18 to 24 months react to the Schick test, the diphtheria immunization should be given.

At the age of 3 years all children should have a tuberculin test. This test should be given every third year up to the eighteenth year.

Scarlet fever immunization is given at the age of 2 to 4 years. The Dick test will show the immunity of the child to scarlet fever.

The smallpox vaccination is given at the age of 5 to 6 years. If at this time a Schick test is positive, a reinforcing immunization against diphtheria is necessary.

# MEDICINE

and the

## Biologic Sciences



Typhoid immunization is given at the age of 8 to 12 years. It is indicated at any age and, in persons especially exposed, typhoid immunization is given at yearly intervals.

It has been estimated that to prevent epidemics at least 50 per cent of both the pre-school group and the school age children should be immunized. The ideal situation is immunization of all children with resistance maintained by additional immunization as needed.

Jackson, J. W.: Immunize Now, *Hygeia* 25:107 (February) 1947.



## Heart Surgery in Pericarditis

Frequently the sac surrounding the heart may become infected as an aftermath of severe pneumonia, rheumatic infection, or almost any severe infection caused by the *Streptococcus*. Usually a pericarditis is caused by bacteria which travel in large numbers in the blood stream during almost any severe infection.

In acute cases of such an infection the tough pericardial sac fills up with pus. Heart action is interfered with

because of pressure. Today it is good surgical procedure to allow drainage of pus through a small window in the lower front portion of the chest. Such a procedure relieves the pressure and gives the heart its normal working space. Irrigations are often instituted to prevent adhesions which would later interfere with the heart action.

In a chronic inflammatory process the pericardium becomes thick and tough over a period of time. It may even become tightly adherent to the heart itself. Such a condition gradually constricts the heart until circulation can no longer be properly maintained. Patients will exhibit fluid in the abdomen, conspicuous dilation of veins of the skin, and moisture in the lungs. All of these symptoms point to impending heart failure.

The electrocardiogram readily verifies the presence of a chronic constrictive pericarditis. And again surgery is able to do much for such a condition. The leathery pericardium is removed from the front of the heart. If necessary the entire pericardium is separated from the surface of the heart. The heart is now free to expand and beat normally. Results in restoring normal conditions are often dramatic as well as spectacular in prolonging life.

Slaughter, Frank G.: *The New Science of Surgery*, New York, Julian Messner, Inc., 1946, pages 116-117.



## Gout

Approximately 95 per cent of those affected with gout are males. Seldom does the disease have its onset before the age of 35 years. Usually there are recurrent attacks of severe pain, redness, and swelling of one or more joints persisting for a few days to a few weeks. The attacks subside leaving no trace until after many such recurrent acute attacks.

Often the onset occurs at night with severe incapacitating pain. Within the next 6 to 24 hours redness, heat, swelling, and extreme tenderness develop. The initial attack is usually mono-articular and in about 70 per cent of the patients the metatarsal phalangeal joint of the great toe is affected. The later attacks may be mi-

gratory and involve two or more joints at the same time.

The gouty person is frequently overweight and will often give a history of similar episodes in other male members of the family. Attacks seem particularly prone to develop after drinking sprees, after trauma to a joint during unusual activities such as hunting or fishing, postoperatively, and after the use of liver extracts or salyrgan in the treatment of other diseases. Acute arthritis developing in men a few days after major or minor surgery should be regarded as gout unless it can be ruled out.

Characteristic deposits result from the disease. These are known as tophi. They are subcutaneous deposits of urates seen particularly in the cartilages of the ear. They may be seen early in the disease but usually do not appear until after several years of recurrent attacks.

The course of the disease is variable. Some persons have only three or four acute attacks during their lives while others may have a progressive increase in frequency of attacks to several a year. These persons will develop incapacitating deformities due to urate deposits in and around joints.

The diagnosis rests on three factors. First is the clinical course of the disease with emphasis on the age and sex of the patient. Next is the demonstration of an increase in the concentration of urates in the blood. And then there is the response of the patient to colchicine properly administered. In most initial cases hyperuricemia can be demonstrated. The roentgenogram cannot be depended on for diagnosis. Often with experience the gout patient is able to abort an attack with three or four doses of colchicine.

The affected joints should receive special attention with regard to protection, nonweight-bearing, and elevation. Resumption of weight-bearing should be gradual. It should begin only after inflammatory changes and pain have subsided.

Treatment of hyperuricemia is less satisfactory. A diet which avoids foods rich in purine and usually low in calories is indicated to prevent weight increase. The use of alcohol should be moderate or eliminated if

impairment of the liver is present. It seems advisable to be moderate in eating and physical activity at all times.

Robinson, William D.: The Diagnosis and Management of Acute Arthritis, *American Practitioner* 1:285-291 (February) 1947.



### Folic Acid

There have been numerous accounts recently of the use of folic acid in the treatment of the anemias. Folic acid is a term that was once used to refer to a substance in spinach required for the growth of *Streptococcus lactis* R. Now, the term is applied to a group of substances found in yeast, liver, green leaves, cereals, and other foods that contain the vitamin B complex.

The interest of the medical and dental professions in this group of substances lies in the ability of some of them to produce remissions in several nutritional macrocytic anemias, including pernicious anemia.

It requires far less of the solids of purified liver extracts to attain a hematologic effect comparable to that attained from the use of folic acid. The folic acid content of purified liver extracts is negligible. Folic acid is not the principle in liver extract effective in pernicious anemia. It does not restore the secretory activity of the stomach in pernicious anemia as far as the hydrochloric acid is concerned.

In contrast to liver extracts, folic acid is equally effective when given orally or by injection. The effective dose of folic acid is 5 to 20 milligrams daily by mouth or injection. Daily doses are apparently advised because patients treated in this manner show maintenance of normal blood counts. However, the results are less satisfactory if folic acid is given in large doses every one or two weeks. Probably this arises from the fact that one third to one half of a 10 milligram dose may be lost in the urine within twenty-four hours.

At the present time folic acid apparently does not provide dramatic new hope for anemics as a therapeutic agent. There is no anemia that folic acid relieves that is not also relieved by liver extract.

The two advantages claimed for folic acid should be examined. Oral therapy of folic acid relieves the necessity of repeated injections. Offhand this might appear to be an advantage. However, many men believe this may lead to a neglect in treatment by patients who treat themselves with oral medications. Good health is usually maintained in pernicious anemia with an injection of 1 or 2 cubic centimeters of purified liver extract as seldom as every two or four weeks.

The other objection to liver extracts is that some patients are allergic to them. Folic acid has been recommended for these people. It has been found that the sensitivity of many patients to certain liver extracts may be relieved by changing to another type of extract.

It will take time and investigation to prove the superiority of folic acid over liver extracts.

Editorial: *New England J. Med.* 236:219-220 (February) 1947.



### Tubercle Bacillus

The tubercle bacillus or *Mycobacterium tuberculosis* resists many disinfectants and is indifferent to cold and heat for a simple reason: A thin, wax-like coat or capsule serves as a protection around the bacillus. In this manner nature has provided an ingenious and practical protection against germ-killing substances.

No remedy or drug has been discovered which will promptly destroy the tubercle bacillus. Penicillin and the sulfa drugs have no effect whatsoever. To date there are encouraging results from the use of streptomycin. Its best results have been observed in some of the many forms of tuberculosis. However, in tuberculosis of the lungs the results are not spectacular. The exact nature of the effect of streptomycin is not known. It apparently has a suppressive action which affords nature a better opportunity to combat the disease.

Heat does not kill the tubercle bacillus as fast as it does other germs. Some of them may remain alive in dry sputum even after being kept at 100°

Centigrade for twenty minutes. The bacilli even have the ability to resist certain chemical disinfectants.

Medical scientists believe that the agent to solve the puzzle must be of a fat-splitting nature. An agent or drug, to be effective in destroying the germ, must first penetrate the coat of wax. A great deal of research has been done on substances capable of dissolving fat.

The body has such a natural substance, the enzyme lipase. Those who have an excess of lipase in their systems combat tuberculosis better than those with a lazy fat-splitting mechanism. People who eat too little fat or who have inherited a poor fat-absorbing mechanism are more easily affected with tuberculosis.

It has been asserted that physiologically the underlying factor of tuberculosis is the inability of the body organism to break down the fatty shield that protects the germ because of low activity of the fat-splitting mechanism. The conquest of tuberculosis will be greatly enhanced when science finds a mold or bacterium able to split away the waxy coat of the tubercle bacillus.

Sokoloff, Boris: *The Civilized Diseases*, New York, Howell-Soskin, 1944, pages 164-167.



### ***Ringworm of the Scalp***

Ringworm of the scalp has assumed a position of considerable importance in the United States during the past

few years. There have been several epidemics reported. As a consequence the problem is one of importance to public health, for the protection of the community is as important as the treatment of the individual.

The disease may be caused by the *Microsporon audouini* or the *Trichophyton* group of fungi. However, the *M. audouini* has been responsible for the rapid increase in the United States.

The organisms have species which are pathogenic for certain lower animals. Humans are poor hosts for these fungi. The fungi are only slightly, if at all, contagious among human beings, and they are either self-limited or respond to local treatment. It is possible for members of one family to become infected from a pet but epidemics do not arise from this source.

The infections with human (anthropophilic) fungi are contagious among humans and usually are resistant to topical treatment. These infections may persist for years.

*M. audouini* produces a gray patch containing broken hairs, a fine scale, and a noninflammatory base. These symptoms are usually indicative of the epidemic form. The Wood light (black light) positively confirms the diagnosis. It will produce a brilliant green fluorescence of hairs infected by the *M. audouini*. The use of the light is of great value in surveying large numbers of school children because it is a dependable method of early detection with a minimum of time and effort.

A survey of public health offices in cities in the United States over 40,000 was concluded in January 1946. It revealed that ringworm was present, or had been recently, in epidemic proportions in 61 cities. The greatest incidence of the disease occurred in the east and middle west, probably due to the fact that the large cities act as large foci for other communities.

The occiput is the usual site of initial involvement although it is sometimes noted in the temporal region. The *M. audouini* is doggedly resistant to topical treatment. Encouraging results have been secured through epilation by means of roentgen rays. At puberty the disease spontaneously disappears.

The exact nature of transmission is uncertain. Investigations have eliminated the barbershop because very few girls patronize the barbers. One plausible factor is the contamination of the backs of theater seats. This seems to have been a definite factor in some of the epidemics. This should serve as a precaution to the dentist to be certain the headrest of the chair is always clean.

Because of the public nature of the disease it is wise to look on any gray scaling patch containing broken hairs with suspicion. The physician and the public health officials should be consulted as one step in the prevention of epidemics of this condition.

Steves, Richard J., and Lynch, Francis W.: *Ringworm of the Scalp*, J.A.M.A. 133:306-309 (February 1) 1947.

## **Announcement of Books Received**

**DENTAL EDUCATION TODAY**, By H. H. Horner, First Edition, Chicago, The University of Chicago Press, 1947, Price \$6.00.

**APPLIED ANATOMY OF THE HEAD AND NECK**, By Harry H. Shapiro, D.M.D., Second Edition, Philadelphia, J. B. Lippincott Company, 1947, Price \$10.00.

**INDEX TO DENTAL PERIODICAL LITERATURE**, 1942-1944, By the Committee on Library and Indexing Service of the American Dental Association, Chicago, American Dental Association, 1946, Price \$10.00.

**THREE QUARTER CROWNS**, By F. Engel, L.D., R.C.S., Translated and Revised from the German Text, Brooklyn, New York, Dental Items of Interest Publishing Company, Inc., 1946, Price \$5.00.

**THE STORY OF DENTISTRY**, By M. D. K. Bremner, D.D.S., Second Edition, Brooklyn, New York, Dental Items of Interest Publishing Company, Inc., 1946, Price \$6.00.

# Contra- Angles

## Vultures at the Smorgasbord . . .

Somewhere I read that people who are inordinately hungry and drooling for food at all hours are suffering from a deep sense of insecurity. Not since these people left the protective warmth and security of their mothers' breasts have they felt at ease. A full gut, a storeroom bulging with canned things, a locker bursting with frozen foodstuffs, give these people the strength to face the world. Without this backlog for intestinal morale, these folks are sniveling in their sense of inadequacy.

I do not know whether or not this theory is true but it sounds as though it might have some merit. One of my own neuroses concerns the sight of large quantities of food. When I see great heaps of foodstuffs and dozens of choices, I experience a feeling of utter confusion. I am entirely inadequate in cafeterias for that reason. When I see arrays of edibles, I can never make up my mind whether to take beef stew or chicken giblets, green beans or stewed tomatoes. I end by trying something of everything and get to the cashier's desk with a heavy tray and a bill of magnitude. I experience the same kind of frustration before the smorgasbord or at a buffet supper.

These self-service arrangements would not be so bad if they were strictly stag affairs and women were kept out of the parties. Women hunt and pick and explore the piles of foodstuffs more than do men. A woman pokes around in the piled up food as if she were churning up a compost heap. A man doesn't shove his neighbors so much or reach over one's shoulder with a dripping spoon of potato salad. Women titter back and forth as they load their plates, aching

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and exclaiming over the cute designs of the dusted paprika and the garlands of parsley on the dishes. Men are grimmer about the whole business. They are looking for the slices of roast beef and the rugged foods hidden among the dainty dishes.

I have a falling-away feeling when I see some cute, trim little number at one of these parties loading her plate like a stevedore. The little lady who looked so lovely in the shaded lights at cocktail time, who spoke so softly and rolled her pretty eyes so fetching-ly, is often transformed into a swooping vulture when eating time arrives. She is the first in line, jabbing and gesticulating with her fork, shoving here and pushing there, and screaming in delight as she stabs a pickled herring.

Nor do I like women who have a cigarette hanging from their mouth when they approach the serving table. Women lack the skill of letting a cigarette dangle from their lips. They do not have the basic finesse to do this maneuver with nonchalance. A woman trying to juggle a cigarette when her hands are busy with other things looks so pained and awkward, as though she has an itch in a spot which she can't attend to and still hold her standing as a lady. I have never seen a woman who could negotiate a cigarette without the use of hands, who didn't get smoke under her mascara and into her windpipe. Lacking that skill, women should never smoke around foodstuffs. Their hair in the gravy is bad enough!

Somebody might think that I was an advocate of the stag party. Certainly nothing is duller than that, even with a strip tease included. I am for women at parties but where food is involved, I insist that they eat quietly at tables and take what is served to them. To turn women loose at a smorgasbord or at a buffet supper is to disillusion me—they are too damn anxious.

#### **Lilac for Remembrance...**

This is the season for lilacs but not the kind I have in mind. I have this monstrosity to report: With my own eyes I saw an automobile with a conspicuous lilac emblem, a caduceus,

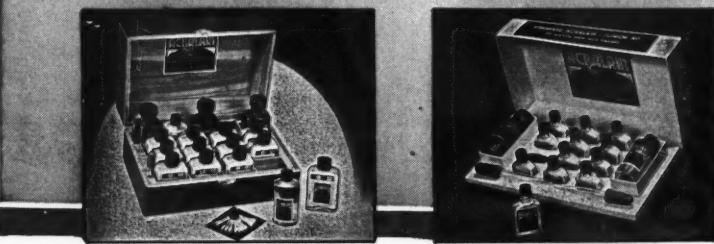
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Price of any assortment—\$15.50

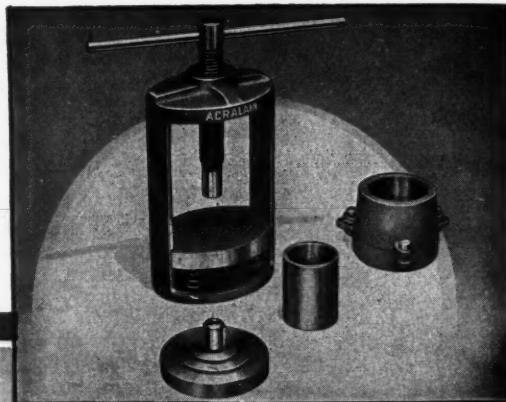
and the letters D.D.S. emblazoned on it. I suppose that the dentist-owner of this car thought that this sign would give him the right of way like an ambulance and the privilege of parking in forbidden areas. What pomposity!

There are legitimate reasons why some physicians should have emblems on their cars. They are on occasions required to make emergency life-and-death calls and in such cases should have the right of way and be allowed

to park anywhere. These emblems, of course, should give the physician no priority in ordinary times. The times when dentists should be given extra traffic courtesies are rare indeed.

Now if the dentist sticks the sign on his car to drum up business, that is a matter for the committee on ethics of his society to decide. A lilac D.D.S. emblem on an automobile seems to me to be in bad taste and something like a neon light hanging in front of an office.

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Dentists in Europe, in common with their fellow countrymen, are hungry. From time to time we receive letters out of Europe from our dental colleagues who are asking for shirts, chocolate, canned food, blankets, and such necessities. Up to this time there has been no organization which would assure us that these packages of necessities would get through directly to the persons making the re-

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#### **Consultation Gratis . . .**

If you are to enjoy a vacation, keep your profession a dark secret from neighbors. If you want to hear interminable recitations of people's dental experiences and wish to be deluged with requests for free advice, tell your neighbors that you are a dentist. If you are on a cruise, at a fishing camp, or sunning at the seashore, reveal your profession and you can count on every conversation switching around to a dental subject. Tell your neighbors that you are a white slaver, a nuclear physicist, or a bean farmer. Tell them anything except that you are a dentist. If you are one who insists on being known as "doctor," let your vacation-time friends think that you are a doctor of philosophy in Sanskrit. If you have rigid scruples against any kind of deception, say that you are an endodontist; that will stop them.

Not long ago I was doing a pretty convincing job of protecting my anonymity and masquerading as a businessman until a damned excited patient called me fifteen hundred miles to announce in terror that he had lost an inlay. I had to take the

call in a hotel lobby where a dozen pair of ears listened to the conversation. If the distressed patient at the other end of the line didn't receive much satisfaction from my advice, it was because I was trying to have the thing sound like anything but a long-distance dental consultation. One of the visitors in the lobby had been telling me and everybody else, for that matter, about the tooth he had had extracted in "fourteen pieces." This same gentleman was waiting in an edentulous state for a dentist to make him a full denture. I knew that he would be getting his denture when I was still his next door neighbor. I'll be damned if I'll listen to the complaints of another dentist's patients; I have enough trouble with my own denture patients.—E.J.R.

## **Formation of Calculi and Ascorbic Acid Deficiency**

**W. J. McCORMICK, M.D., Toronto**

DURING the last century there has been a general decline in the incidence of urinary calculi in most countries. In countries where there are impoverished diets, however, the incidence is still unusually high. This would seem to suggest a nutritional etiology for lithogenesis (formation of calculi).

The statement was made in 1929 that ". . . the hypothesis that stone is a deficiency disease is the most plausible and probable that has yet been advanced . . . vitamin starvation acts primarily on the renal epithelium and through it on the colloidal mechanism of the urine; also, . . . once this mechanism is deranged, stone formation must follow as a direct result of the laws of physical chemistry." The literature regarding experimental production of urinary calculi, however, is still in a state of flux and lacks conclusive evidence regarding the dietary factors responsible for the disease in man.

## **Dissolution and Prevention of Renal and Dental Calculi**

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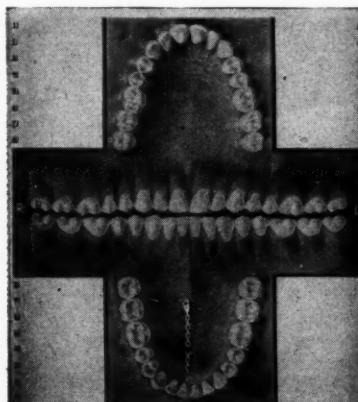
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hand, seems to indicate that the beneficent effect of apple cider, for instance, on the dissolution and prevention of renal calculi is due to its content of vitamin C (ascorbic acid). It has been observed in many cases that a cloudy urine, heavy with phosphates and epithelium, is generally associated with a low vitamin-C status. As soon as corrective administration of the vitamin effects a normal ascorbic-acid level, the crystalline and organic sediment disappears like magic from the urine. It would thus appear that deficiency of vitamin C, which is the predominating dietary defect in the various "stone areas," may provide the determining factor in urinary lithogenesis.

There is evidence that the biochemical change involved in the dissolution of calculi is metabolic or systemic and not merely local in the urinary tract. Calcareous incrustation at the inner canthus of the eye and on the cornea, and salivary or dental calculi are also associated with C-hypovitaminosis. The ocular calcareous deposits may be cleared away in a few days by correction of vitamin-C status. *Dental calculus, which lays the foundation for so much dental havoc, can be quickly suppressed and prevented by an adequate intake of vitamin C.*

Attention was first called to the possibility of a correlation between vitamin C intake and calcareous deposits by frequent spontaneous reports from patients who had adopted a dietary regimen prescribed to correct basic nutritional deficiency. They noticed that their teeth or dentures felt much smoother to the tongue and their dentists noted a marked reduction in dental tartar. Other cases reported an unusual clarity of the urine following adoption of the regimen. (The dietary regimen included all the vitamin-B-complex factors as well as a liberal intake of vitamin C. By trial and error and process of elimination, it was found that the vitamin-C component of the regimen was the major factor in bringing about not only freedom from dental deposits of salivary calculus, but complete and prompt elimination of precipitates of

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DIGEST

calcium phosphates from the urine.)

Continued use of a liberal vitamin-C intake has been found to result in rapid clearing of epithelium and other organic detritus from the urine and a marked reduction of gingival erosions and epithelial desquamation. These effects have been observed in so many cases that the correlation between C-hypovitaminosis and lithogenesis in general seems indubitable.

### **Effect of C-Hypovitaminosis on Dental Tissues**

*Structural Changes*—A lack of vitamin C definitely tends to fragility of the perivascular submucous and subcutaneous connective tissues as a result of the liquefaction of the collagenous intercellular cement substance. (This condition is manifested clinically by easy bruising of the tissues generally, due to rupture of the small blood vessels.) In the mouth, the gingivae become tender and subject to hemorrhagic abrasions in brushing the teeth or by friction of dentures. Desquamation of the buccal mucosa becomes accentuated. This material, augmented by food remnants, forms a necrotic detritus which, when deposited in the interdental spaces, provides an excellent nidus for ubiquitous micro-organisms, pyogenic and mycelial. This conglomerate supplies the matrix or nucleus for the deposition of calcareous material (tartar) which, in turn, sets up inflammatory changes in the gingival tissues, these having lost their natural resistance to infectious invasion by reason of the C-hypovitaminotic breakdown in the connective supporting tissue. Thus a vicious circle is established, accentuating calculus formation and gingivitis and leading to pyorrhœa and serious destructive periodontal lesions.

*Clinical Changes*—1. Reports on the dental condition of the Tibetans and people of the west China border state that heavy deposits of salivary calculi, sometimes sufficient to mask the dental formation, are very common. The diet of these people is highly deficient in vitamin C, consisting mostly of butter, tea and barley flour or rice. Very scant sup-

### **CLINICAL AND LABORATORY SUGGESTIONS**

*(See pages 234 and 235)*

Form to be Used by Contributors

To: Clinical and Laboratory Suggestions Editor

DENTAL DIGEST  
708 Church Street  
Evanston, Illinois

From: \_\_\_\_\_

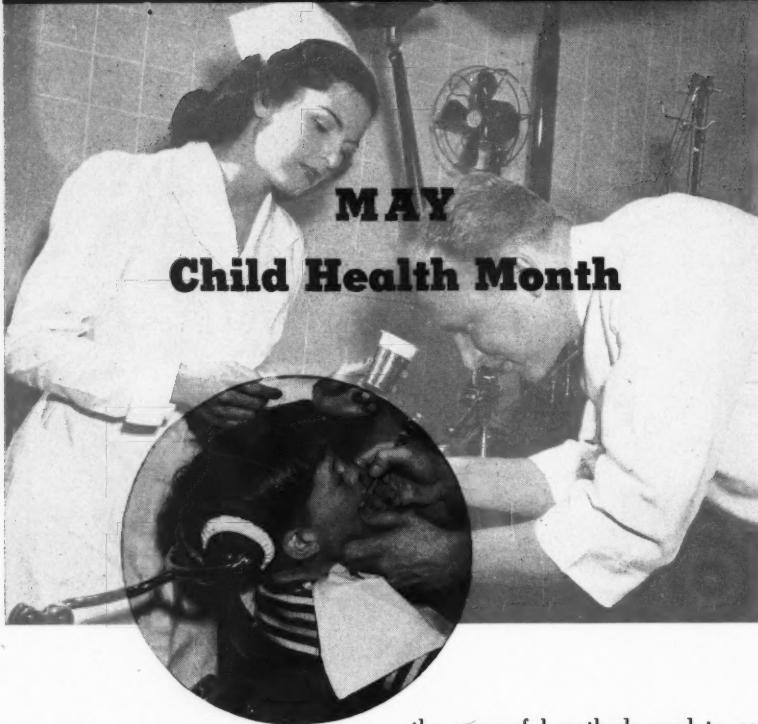
Subject: \_\_\_\_\_

Explanation of Procedure:

Sketch: \_\_\_\_\_

**\$10 will be paid to author on publication of accepted suggestions.**

## In your ORAL HYGIENE this month



Do you treat children? . . . Whether the answer is Yes or No, you will want to read Doctor J. E. Opper's interesting article, "Child Psychology at the Dental Chair." Doctor Opper believes that every general practitioner can and should include the child patient in his practice, and urges dentists to "remember that the child of today is the adult of tomorrow."

★ ★ ★

Are you redecorating your reception room? . . . Marion Stutzman gives some interesting suggestions for making both adults and children comfortable in the article "A Reception Room for Children."

★ ★ ★

Doctor Kent K. Cross wanted to build a bungalow dental office . . . and, in spite of all sorts of difficulties, he succeeded. In less than ten months, he moved into his own home—and his own office. He says, "I have three times the space I previously had for the same office overhead." . . . It can be done—even in these days of post-war shortages.

★ ★ ★

"Hospital Treatment of the Bleeding Tooth Sockets"—Doctor Howard E. Kessler, Resident in Anesthesia and Oral Surgery at San Diego County General Hospital, describes in detail

the successful methods used to control excessive bleeding after extractions.

★ ★ ★

"Some Surgical Hints"—Doctor Benjamin Tucker, an oral surgeon, offers valuable suggestions for rendering better operative service to dental patients. You won't want to miss this article.

★ ★ ★

"Problems in Dental Treatment for Children"—Age is no guarantee of emotional maturity. Among your own patients you probably have some adults who are "worse than children." Doctor S. R. Laycock suggests that "dentists should have a particular interest in the study of child psychology not only for the sake of handling the children whom they treat but also for the sake of handling the grown-up children who come to the dental office."

★ ★ ★

"Is the dental profession going to settle back complacently, now that hostilities are over, and make no attempt to correct the indignities and mistakes inflicted upon the members of the Dental Corps during the recent war?" asks an ex-Army dental officer. He suggests concrete ways in which the profession may help "Clean Up the Caduceus."

plies of fresh fruits are available and then only seasonally.

2. Indians of James Bay and Labrador present few mouths without calculus formation. The diet of these tribes consists mostly of white-flour biscuits, oatmeal, lard, fish, wild game, tea and sugar. Their supply of fresh fruits and vegetables is limited to seasonal berries, sprouting buds and moss. Such a diet is obviously deficient in vitamin C.

3. Children with celiac disease, on special diets of high protein and low fat content with little or no fresh fruit or vegetables, show rapid dental calculus formation. The diet in these cases is predominantly deficient in vitamin C.

4. In a recent survey of nutritional conditions in Newfoundland, a concurrent widespread prevalence of urinary and periodontal disease was reported, heavy deposits of dental calculi being a prominent feature of the latter. According to this survey, deficiency of vitamin C is the major nutritional defect in Newfoundland.

5. In South China, where rice is the staple diet, the incidence of both urinary and dental calculus is very high.

6. In a recent report on "acute and chronic ascorbic-acid deficiency in Rhesus monkey" the early appearance of a "white sticky residue" on the teeth was noted which progressed to heavy deposits of dental tartar.

### Comments

The hypothesis has been advanced that vitamin-C deficiency is the major etiologic factor in lithogenesis. On this basis the marked reduction in the incidence of urinary calculi in the last century and the shift in age incidence from infancy and childhood to the older age groups could be explained (1) by the more widespread distribution and increased supply of citrus and other fruits and (2) by the advances in modern pediatric nutrition whereby citrus and other fruit juices rich in vitamin C are included in the diet of early infancy. This dietary revolution has not been adopted so freely by the older age groups.

Desquamated epithelium and amor-



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phous or crystalline phosphates are so frequently observed in the urine of apparently healthy subjects and dental deposits of salivary calculi are so widespread that we have been inclined to regard these conditions as normal. And this opens up the wider concept that calculi found in many other parts of the body, as in the biliary tract (gall stones), the pancreas, the tonsillar crypts, and appendix vermiciformis; the conjunctiva (in the ducts of the Meibomian glands), the nasal tract (rhinoliths), the mammary glands, the uterus, the ovaries, and testicles, the prostatic gland, the blood (haemoliths), the gastro-intestinal tract (gastroliths and enteroliths), and even the calcareous deposits in arteriosclerosis and in arthritic and gouty tophi, may all have a similar nutritional-deficiency background. In other words, we may now have the basic etiologic solution of the supposed constitutional tendency to calculi formation which was formerly thought to be hereditary.

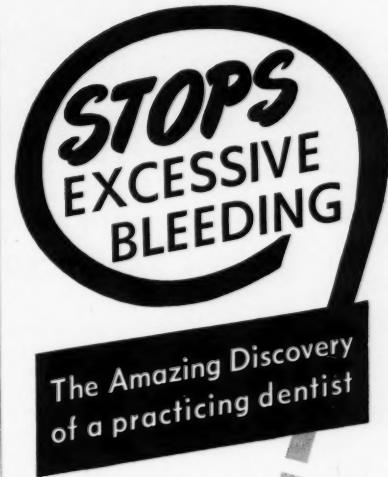
### **Summary**

Clinical observations and laboratory experimentation on the effect of the administration of vitamin C in altering the physio-chemical properties of the urine and other body fluids, principally in eliminating deposition of phosphates, has led to the hypothesis of C-hypovitaminosis as the basic etiologic factor in lithogenesis in general — urinary, salivary, biliary, etc. A correlated study of the literature regarding the history of calculous disease and the changed trends in nutrition, particularly in the matter of vitamin-C intake, lends support to this hypothesis.

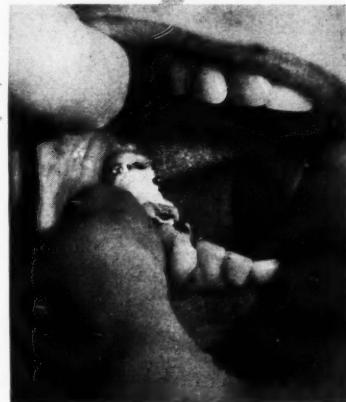
From *The Journal of the Canadian Dental Association* 12:342-346 (August) 1946.

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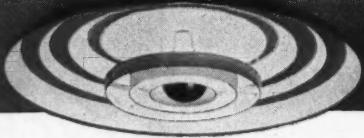
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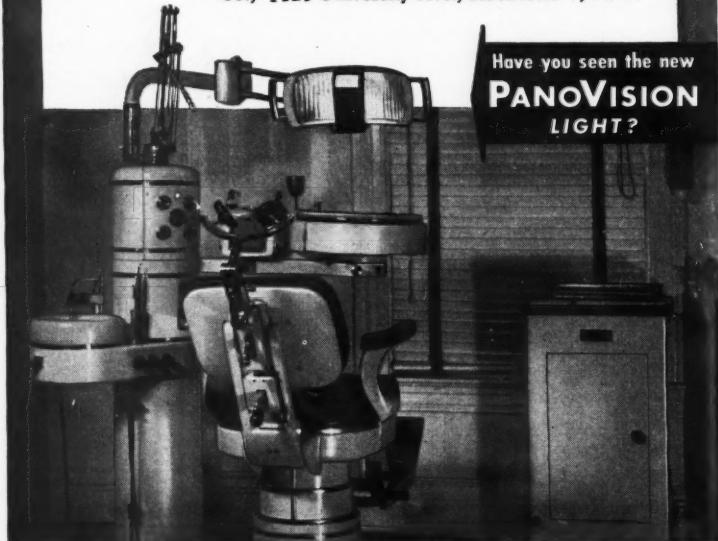


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porting tissues, etiology, classification of periodontal diseases, diagnosis, problems of treatment, home care, and other aspects of periodontics. Gingivectomy will be performed and postoperative treatment carried through on a patient.

Because of the housing difficulties in Colorado Springs, those interested in the course are urged to communicate with Doctor Orban, 180 North Michigan Avenue, Chicago, Illinois, at once. The attendance will be limited.

### **The LABILITY of Bone**

A NUMBER of different chemical and physical experimental approaches have demonstrated that the skeleton is surprisingly labile: Bone salts can be withdrawn from this reservoir under a variety of influences as well as deposited when circumstances are favorable.

The fact that bone is hard and rigid and appears so admirably to fulfill its mechanical functions is likely to turn attention from its capacity as a labile reservoir of mineral salts. Long before actual experimental demonstration, the pathologist was aware of such abnormalities of mineralization or of decalcification as rickets, scurvy, osteitis fibrosa, cystica, and osteoporosis. More than a decade ago it was demonstrated that restriction of experimental animals to a salt-poor ration not only reduced the proportion of total bone ash but actually

altered the chemical composition of the salt deposited in the growing skeleton.

#### Action of Hormones

The mobilization of minerals from the skeleton is influenced by certain of the hormones.

1. The thyroid hormones have been used in the removal of lead from the body after lead poisoning; the heavy metal appears to be mobilized from the bone along with the calcium phosphate with which it was deposited.

2. The hormone of the parathyroid glands has a definite effect on bone calcium; deficiency of this substance results in hypocalcemia and a resultant tetany; an overproduction of the hormone produces hypercalcemia and net losses of calcium and phosphorus, which salts come from the skeleton.

3. The estrogenic hormones bring about a pronounced shift of bone salts from the symphysis pubis to the long bones in certain species with the result that the breaking strength of these leg bones is greatly increased and the chemical composition of the bone salts is altered.

Purely physical evidence of the intense activity in the femur as a result of the administration of estrogens has recently been reported; the x-ray diffractograms of sections of these bones show complete disorientation of bone salt crystals in the cortex.

#### Conclusion

This fundamental concept, the lability of bone, has helped to explain certain clinical conditions and should be kept in mind in the therapeutic and nutritional approach to medical problems.

From Editorials, *Journal of the American Medical Association* 133:110-111 (January 11) 1947.

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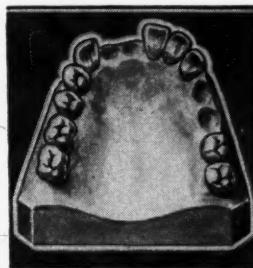
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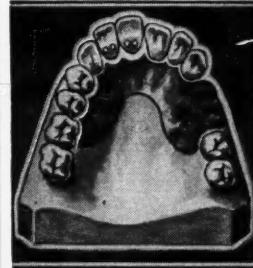
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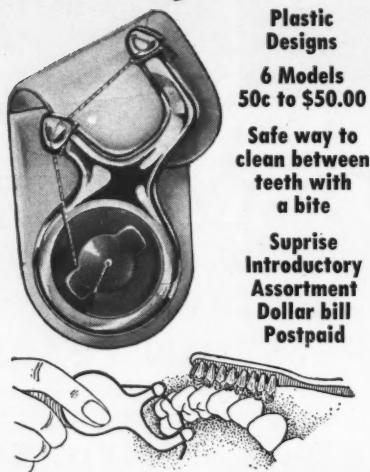
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been before. It has been administered in many thousands of cases both in and out of the Armed Services by persons who knew little about anesthesia of any kind. It has been administered by persons who had some knowledge of anesthesia but none of pentothal. It has been administered, by those who should know better, in rooms where there was no oxygen, and has been given to patients who were at the same time old, sick, and feeble—bad risks under any condi-

tion. It is really remarkable and to its everlasting credit that an anesthetic agent so carelessly used has survived.

There is no doubt that sodium pentothal is destined to have a brilliant future in the field of oral surgery. There is hope, also, that someday a preparation similar to this may be developed which will be used for analgesia in the preparation of cavities. From *Kansas City District Dental Society Bulletin* (January) 1947.

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